PROJECT facts
U.S. Department of Energy
National Energy Research Laboratory

Materials and Advanced Metallurgical Research
11/2001

Improved Membrane Materials and Economical Fabrication (Efficient Sintering of Thin Supported Films)

Project Lead
Oak Ridge National Laboratory (ORNL)
Oak Ridge, TN

Description

Duration: 10/1/98 - 9/30/01

The purpose of this task is to develop infrared plasma processing as a method to rapidly sinter yttria-stabilized zirconia (YSZ) electrolytes on porous supports composed of lanthanum manganite or YSZ/NiO composites. This process will fully evaluate and determine the feasibility of this process for sintering YSZ films deposited by screen-printing on green and pre-sintered support structures. The goal of this process is to reduced cycle times and costs for fuel cell fabrication. In addition, this task will model the stresses that develop within the electrode (either anode or cathode)/electrolyte layer as a direct results of sintering.

Product Support Areas

Gasification Technologies	Combustion Technologies	Sequestration	Environmental & Water Resources	Advanced Turbine & Engines	Fuel Cells
✓		✓	✓		✓

NETL

Project: FEAA02D
Code: ORNL-3A

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